ANACONDA Copper Company Internal Correspondence

RECEIVED
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Date: May 1, 1981

To: E. L. Cambridge

From: T. R. Bolles

Subject: Laboratory Requirements

At present I am working on two projects, the ammonoalunite project and the basement debris project. The basement debris project requires primarily sizing equipment. This includes:

screens
Ro tap
electronic balance
counter space
storage area

The ammonoalunite project, because it is a hydrometallurgical project, requires much more equipment. The immediate requirements for equipment include:

A high temperature reactor apparatus of Carpenter 20 construction.
A sink with water for cooling the glands for the reactor and for solution disposal.
A vacuum line, vacuum flasks and buckner funnels.
A hot plate, mixer, beakers and ring stand.
a pH meter.
Burettes
Graduated cylinders
Tube furnace, combustion tubes, milligan flasks for product decomposition and gas scrubbing.

At a later time, equipment for clay leaching will have to be used. This includes:

Muffle furnace for clay calcining.
Heating mantle, leaching flasks and reflux condenser for high temperature leaches.

The analytical requirements for these two projects present some difficulty in that the analytical department is not set up to analyze at the levels required by the projects.

The basement debris analytical requirements are:

SiO_2 from <.1% to 10%
Al_2O_3 from <10% to 99%
Fe from .1% to 2%
Na_3AlF_6 from <10% to 90% - An analysis of the ratio of $NaFl/AlF_3$ should also be available.
C from 1 to 50%

The ammonoalunite project analytical requirements are:

Al_2O_3 from 15 to 50 g/l in solutions, from 20 to 99% in solids
NH_3 from 1 to 8 g/l in solutions, from 1 to 10% in solids
S free acid as SO_4 in solutions, from<.1 to 20% in solids

Impurity levels
Solutions as g/l

MgO	CaO	Cr_2O_3	P_2O_5	Na_2O	K_2O
.15	.1-.5	.01	.15	.1	.1

Solids as % - These are target values.

MgO	CaO	Cr_2O_3	P_2O_5	Na_2O	K_2O
<.01	.03	<.01	<.001	.1	<.01

T. R. BOLLES

TRB:pm